

WHAT IS CLAIMED IS:

1. An electrical connector adapted for mounting to an electrical apparatus used in either high pressure or high temperature, or both high temperature and high pressure, applications comprising:

a metal body for mounting to the electrical apparatus having at least one conductor for carrying electricity to or from the electrical apparatus extending through said body;

a thermoplastic jacket applied over the conductor and to the end of said metal body subjected to either high pressure or high temperature, or both high temperature and high pressure, for sealing around the conductor; and

an insulative material interposed between the metal body and the conductor extending therethrough for sealing around the conductor.

2. The connector of claim 1 wherein said insulative material is comprised of a glass or ceramic material, or a combination of glass and ceramic material.

3. The connector of claim 1 wherein said insulative material is comprised of a glass ceramic and ceramic material, or a combination of a glass ceramic and ceramic material.

4. The connector of claim 1 wherein said insulative material is comprised of a brazed metallized ceramic material.

5. The connector of claim 1 additionally comprising a second insulative material interposed between said metal body and the conductor extending therethrough.

6. The connector of claim 5 wherein one of said insulative material is comprised of glass and the other is comprised of ceramic.

7. The connector of claim 5 wherein one of said insulative material is comprised of glass and the other is comprised of thermoplastic or other flexible insulating material.

8. The connector of claim 1 wherein said thermoplastic jacket is applied by overmolding or press-fitting over said metal body having the conductor extending therethrough.

9. The connector of claim 1 wherein said thermoplastic jacket is comprised of an aromatic polyether ketone.

10. The connector of claim 6 wherein said thermoplastic material is selected from the group consisting of PEK, PEEK, PAEK, and PEKK, and blends of PEK, PEEK, PAEK, and PEKK with other plastics, modifiers, extenders, and polymers.

11. The connector of claim 1 wherein said thermoplastic jacket is comprised of a thermoplastic that is non-hydrolyzable and resistant to high temperature wellbore fluids, acids, and solvents, maintains favorable dielectric properties and volume resistivity at high temperatures, and retains high viscosity at high temperature and pressure.

12. An electrical connector adapted for engaging the bulkhead of an electrical apparatus comprising:

- a metal body having a bore therethrough;
- an elongate electrical conductor extending through the bore in said metal body;
- an insulative material for holding said conductor in the bore in said metal body and sealing against said conductor;
- a thermoplastic jacket sealing over the portion of said conductor extending out of said metal body;
- an O-ring on the outside diameter of said thermoplastic jacket for sealing against the bulkhead of the electrical apparatus; and
- an O-ring on the outside diameter of said metal body for sealing against the bulkhead of the electrical apparatus.

13. The electrical connector of claim 12 wherein said thermoplastic jacket is comprised of a thermoplastic material that, when exposed to heat and pressure, cold flows such that the thermoplastic material also seals against the bulkhead of the electrical apparatus.